

## CURRICULUM VITAE

September 2014

***Oleg A. Godin***

CIRES, University of Colorado and  
NOAA/OAR/Earth System Research Laboratory  
325 Broadway, David Skaggs Research Center  
Boulder, CO 80305-3328  
Telephone: 303-497-6558 (voice), 303-497-5862 (fax)  
E-mail: Oleg.Godin@noaa.gov

### PROFESSIONAL INTERESTS

Theory of wave propagation in inhomogeneous media; underwater acoustics; ocean remote sensing; physical acoustics.

### EDUCATION

D. Sc. ("Habilitation") in physics and mathematics with specialization in acoustics from the Russian Academy of Sciences, Moscow, Russia, 1992. Thesis title: "Theory of Sound Propagation in Stratified Moving Media"; Ph. D. in physics and mathematics with specialization in applied physics from Moscow Institute of Physics and Technology (MIPT) and the N. N. Andreev Acoustical Institute, Moscow, Russia, 1984. Thesis title: "On Waves Reflection by Layered Media" under the supervision of Academician Prof. L. M. Brekhovskikh; M. S. *summa cum laude* in applied physics from Moscow Institute of Physics and Technology, 1982. Thesis title: "High Frequency Theory of Lateral Waves" under the supervision of Academician Prof. L. M. Brekhovskikh.

### RESEARCH EXPERIENCE

05/2002 – present	Senior Research Scientist (Full Research Professor), Cooperative Institute for Research in Environmental Sciences, University of Colorado and NOAA/Environmental Technology Laboratory (In October 2005, Environmental Technology Laboratory became a part of NOAA/Earth System Research Laboratory.)
04/2001 – 04/2002	Research Scientist III (Associate Research Professor), Cooperative Institute for Research in Environmental Sciences, University of Colorado and NOAA/Environmental Technology Laboratory
08/1999 – 04/2001	Senior NRC Research Associate, NOAA/Environmental Technology Laboratory
01/1996 – 09/1999	Visiting Research Professor, School of Earth and Ocean Sciences, University of Victoria
11/1994 – 10/1995	Senior NRC Research Associate, NOAA/Atlantic Oceanographic and Meteorological Laboratory
08/1993 – 11/1994	Acting Head of Acoustic Waves Propagation Lab., P. P. Shirshov Oceanography Institute (OIRAS)
10/1993 – 11/1993	Visiting Researcher, Technical University of Denmark
01/1993 – 03/1993	Visiting Researcher, Institut für Meereskunde an der Universität Kiel
03/1984 – 07/1993 and 1994 – 2004	Junior Researcher, Researcher, Senior Researcher, Principal Researcher, OIRAS

## TEACHING EXPERIENCE

1986 – 1994                      Reader on wave propagation and ocean acoustics, MIPT  
Supervision of 3 Ph. D. and 5 M. S. theses

## AT-SEA EXPERIENCE

22 months at sea as a researcher or chief scientist participating in 6 research cruises devoted to underwater acoustics and physical oceanography

## PUBLICATIONS

### **Books:**

Brekhovskikh L. M., Godin O. A. *Acoustics of Layered Media* (Nauka, Moscow 1989) 414p. (In Russian);  
Brekhovskikh L.M., Godin O.A. *Acoustics of Layered Media. 1: Plane and Quasi-Plane Waves* (Springer, Berlin etc. 1990) X+240p.;  
Brekhovskikh L.M., Godin O.A. *Acoustics of Layered Media. 1: Plane and Quasi-Plane Waves*. 2nd edn. (Springer, Berlin etc. 1998) X+242p.;  
Brekhovskikh L. M., Godin O. A. *Acoustics of Layered Media. 2: Point Sources and Bounded Beams* (Springer, Berlin etc. 1992) XI+395p.;  
Brekhovskikh L. M., Godin O. A. *Acoustics of Layered Media. 2: Point Sources and Bounded Beams*. 2nd edn. (Springer, Berlin etc. 1999) XIII+524p.;  
Godin O. A., Palmer D. R. (Editors) *History of Russian Underwater Acoustics* (World Scientific, Singapore 2008), XX+1211p.;  
Brekhovskikh L. M., Godin O. A. *Acoustics of Inhomogeneous Media*. Vol. 1: *Fundamentals of Sound Reflection and Propagation Theory* (Nauka, Moscow 2007), 446 p. (In Russian);  
Brekhovskikh L. M., Godin O. A. *Acoustics of Inhomogeneous Media*. Vol. 2: *Sound Fields in Layered and Three-Dimensionally Inhomogeneous Media* (Nauka, Moscow 2009), 430 p. (In Russian)

and more than 160 peer-reviewed publications in journals and conference proceedings. More than 80 reports at international conferences and more than 50 reports at other conferences and seminars.

## PROFESSIONAL ACTIVITIES

Member of the Acoustical Society of America (since 1994), the Canadian Acoustical Association (1999–2001), American Geophysical Union (since 2001), EUROMECH – European Mechanics Society (1996–2003), and International Institute of Acoustics and Vibration (2003–2004)

Member of the Technical Committee on Acoustical Oceanography of the Acoustical Society of America (2000–2003, 2004–2010)

Member of Scientific Councils of OIRAS (1992–1996) and of the School of General and Applied Physics, MIPT (1992–1995)

Member of Scientific Committee, Fourth International Conference on Theoretical and Computational Acoustics (Trieste, Italy, May 1999)

Organizer of the special session *Propagation through Inhomogeneous Flows and Remote Sensing of Ocean Dynamics* at the Fifth European Conference on Underwater Acoustics (Lyon, France, July 2000)

Member of Scientific Committee, Fifth International Conference on Theoretical and Computational Acoustics (Beijing, China, May 2001)

Vice-Chairman of Organizing Committee, 9th L. M. Brekhovskikh's Conference on Ocean Acoustics (Moscow, Russia, May 2002)

Member of Scientific Committee, Sixth International Conference on Theoretical and Computational Acoustics (Honolulu, Hawaii, August 2003)

Member of Organizing Committee, 11th L. M. Brekhovskikh's Conference on Ocean Acoustics (Moscow, Russia, May 2006)

Organizer and co-chairman, L. M. Brekhovskikh's Memorial Session, 152nd Meeting of the Acoustical Society of America – 4th Joint Meeting of the Acoustical Society of America and the Acoustical Society of Japan (Honolulu, Hawaii, November-December 2006)

Organizer and chairman of a mini-symposium *Infrasound in Ocean and Atmosphere* at the 8th International Conference on Theoretical and Computational Acoustics (Heraklion, Crete, Greece, July 2007)

Member of Scientific Committee, 8th International Conference on Theoretical and Computational Acoustics (Heraklion, Crete, Greece, July 2007)

Member of Scientific Committee, 9th European Conference on Underwater Acoustics (Paris, France, June - July 2008)

Organizer and co-chairman of a mini-symposium *Infrasound: Generation, Propagation, and Applications to Remote Sensing of the Environment* at the 9th International Conference on Theoretical and Computational Acoustics (Dresden, Germany, September 2009)

Member of Scientific Committee, 9th International Conference on Theoretical and Computational Acoustics (Dresden, Germany, September 2009)

Organizer and co-chairman of mini-symposiums *Acoustic Daylight: Physics, Modeling, and Applications* at the 10th International Conference on Theoretical and Computational Acoustics (Taipei, Taiwan, April 2011)

Organizer and co-chairman of a special sessions *Acoustic-Gravity Waves: From Ocean and Land to Space* at the 2013 General Assembly of the European Geophysical Union (Vienna, Austria, April 2013), at the 2014 General Assembly of the European Geophysical Union (Vienna, Austria, April–May 2014), and at the 2015 General Assembly of the European Geophysical Union (Vienna, Austria, April 2015)

Reviewer for the journals *Journal of Fluid Mechanics*, *Journal of the Acoustical Society of America*, *Geophysical Research Letters*, *Journal of Geophysical Research – Oceans*, *Reviews of Geophysics*, *Akusticheskii Zhurnal (Acoustical Physics)*, *Journal of Computational Acoustics*, *Wave Motion*, *IEEE Journal of Oceanic Engineering*, *Proceedings of the Royal Society (London)*, *Chaos*, and *Waves in Random Media*

Consultant for Department of Physics, University of New Orleans (1997–1998), Quester Tangent Co. (1998–1999), and Department of Geophysics, Colorado School of Mines (2000–2001)

Grantee of NSF, ONR, DoD, NATO, DREA, ISF, RBRF, CRDF, and INTAS

Associate Editor, *Journal of the Acoustical Society of America – Express Letters* (since 2010)

## **AWARDS**

- Winner of a number of all-Union (national) and regional students' competitions in physics and mathematics (1972-1981)
- The Lenin Komsomol National [USSR] Prize in the Field of Science and Technology (1986)
- OIRAS Outstanding Paper (1986, 1988, 1991, 1992)
- The European Academy Prize (1993)
- Russian Federation President's Award for Outstanding Scientists (1994)
- The NRC Resident Research Associateship Awards (1994 and 1999)
- Fellow of the Acoustical Society of America (2000)
- ETL Outstanding Seminar Award (2002)
- CIRES Award for Outstanding Achievements in Science and Engineering (2008)

## **MAJOR ACCOMPLISHMENTS**

Contributions to the theory of lateral waves, including study of the field in the vicinity of critical angle of total reflection and studies of the effects of absorption, stratification, source directionality and roughness of interfaces. Diffraction theory of bounded wave beams displacement upon reflection (the Goos-Hänchen effect). Exact solutions of one-dimensional wave equations for acoustic, elastic and electromagnetic waves in continuously layered media. Extension of Fermat's principle to waves in time-dependent media. Theory of wave propagation in inhomogeneous, compressible, moving, nonstationary fluids, including analysis of caustics, sound-flow resonance interaction, guided propagation, flow reversal theorems, energy conservation, range-dependent waveguides, parabolic approximation, and inverse problems. Theory of elastic-wave propagation in continuously-stratified soft marine sediments. Matched-nonreciprocity tomography – a full-field acoustic tomography technique to monitor ocean dynamics in the coastal zone. Theory of ocean surface roughness modulation by inhomogeneous, time-dependent currents. A method for early tsunami detection from satellites based on a theory of long gravity wave interaction with turbulent wind. Discovery of the anomalous transparency of gas-liquid and gas-solid interfaces for low-frequency sound. Theory of noise interferometry of dynamic environments. Experimental demonstration of passive ocean acoustic tomography with acoustic daylight.